Features

- Built-in diagnostic function to detect short and open circuiting of loads and output status signals
- DMOS 2ch output
- Allows ON/OFF using C-MOS logic level
- Built-in overcurrent and thermal protection circuits

Absolute Maximum Ratings

(Ta=25°C)

Parameter	Symbol	Ratings	Unit	Conditions
Power supply voltage	V_B	35	V	
Input terminal voltage	V_{IN}	–0.3 to 7	V	
Input terminal current	I_{IN}	5	mA	
DG terminal voltage	V_{DG}	–0.3 to 7	V	
DG terminal current	I_{DG}	5	mA	
Drain to source voltage	V_{DS}	V_B–45	V	
Output current	I_O	1.8	A	
Power dissipation	P_D	2	W	Ta=25°C
Source to drain Di forward current	I_F	0.8	A	
Channel temperature	Tch	150	°C	
Operating temperature	T_{OP}	–40 to +105	°C	
Storage temperature	Tstg	–40 to +150	°C	

Electrical Characteristics

(V_B=14V, Ta=25°C unless otherwise specified)

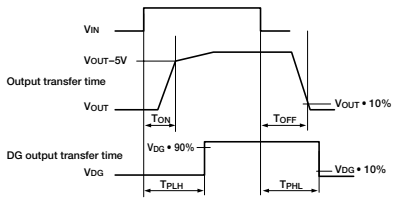
Parameter		Symbol	Ratings min	Ratings typ	Ratings max	Unit	Conditions
Operating power supply voltage		$V_{B\,(opr)}$	5.5		35	V	
Quiescent circuit current		Iq			1	mA	V_{IN}=0V, V_{OUT}=0V
Output ON resistance		$R_{DS\,(ON)}$			200	mΩ	I_O=1A
					300	mΩ	I_O=1A, Ta=80°C
Output leak current		$I_{O,\,leak}$		50	100	μA	V_{OUT}=0V
Input threshold voltage	Output ON	V_{IHth}	1.4	2.0	3.0	V	Ta= –40 to +105°C
	Output OFF	V_{ILth}	1.0	1.8		V	Ta= –40 to +105°C
Inpup current	Output ON	I_{IH}		70	200	μA	V_{IN}=5V
	Output OFF	I_{IL}			12	μA	V_{IN}=0V
Overcurrent protection starting current		I_S	1.9	3		A	V_{OUT}=V_O–1.5V
Internal current limit		I_{Lim}		5		A	V_{OUT}=0V
Thermal shutdown operating temperature		T_{TSD}	155	165		°C	
Load open detection threshold voltage		Vopen	1.5	3	4.5	V	
Output transfer time	*1	T_{ON}		70	140	μs	R_L=14Ω, V_O=–5V
		T_{OFF}		35	90	μs	R_L=14Ω, V_O •10%
DG leak current		I_{DG}			20	μA	V_{DG}=5.5V
Low level DG output voltage		V_{DGL}		0.15	0.5	V	I_{DG}=1.6mA
DG output transfer time	*1	T_{PLH}		70	140	μs	
		T_{PHL}		45	120	μs	

Note: *1. Transient time is showed Wave Form below.

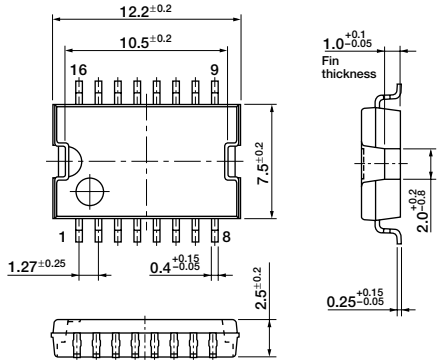
Recommended Operating Conditions (for one channel)

Parameter	Ratings min	Ratings max	Unit
Power supply voltage	5.5	16	V
V_{IH}	4	5.5	V
V_{IL}	–0.3	0.9	V
I_O		1	A
R_{IN}	10	20	kΩ
R_{DG}	10	20	kΩ

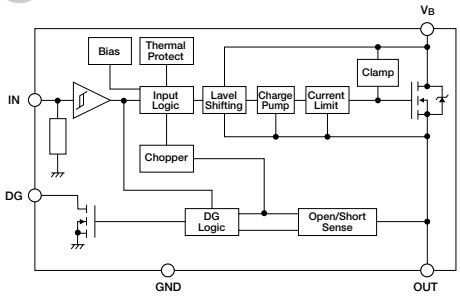
Wave Form



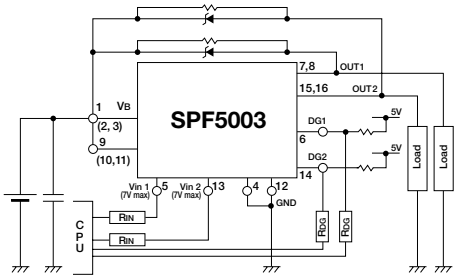
External Dimensions (unit: mm)



Block Diagram (for one channel)

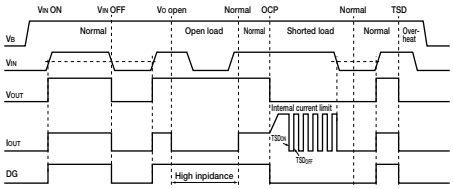


Standard Connection Diagram



* R_{IN} and R_{DG} are needed to protect CPU and SPF5003 in case of reverse connection of V_B terminal.
* Make V_B of 1Pin and 9Pin short from the fin to be plated by solder.

Timing Chart



Mode	V_{IN}	DG	V_O
Normal	H	H	H
	L	L	L
Open load	H	H	H
	L	H	H
Shorted load	H	L	L (Limiting)
	L	L	L
Overheat	H	L	L
	L	L	L

WWW.ALLDATASHEET.COM

Copyright © Each Manufacturing Company.

All Datasheets cannot be modified without permission.

This datasheet has been download from :

www.AllDataSheet.com

100% Free DataSheet Search Site.

Free Download.

No Register.

Fast Search System.

www.AllDataSheet.com